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				U.S. PATENT DOC	JMENTS					
EXAMINER		DOCUMENT NUMBER	DATE	NAME		CLAS	S	SUBCLASS		DATE IF PRIATE
99	AA	5,311,550	5-10-94	Fouche (et al.			\ <u>.</u>		
PP	AB	4,630,287	12-16-86	Armstro	ong					
PP	AC	4,271,527	6-2-81	Armstro	ong	<u> </u>	····			
PP	AD	5,050,188	9-17-91	Dirr						
pp	AE	5,398,073	3-14-95	Wei		• /				
98	AF	5,452,015	9-19-95	Hulyali	car	\	\			
e f	AG	5,565,932	10-15-96	Citta et	al.					
PP	АН	5,481,412	1-2-96	- Bannai e	et al.					•
PP	AI	3,909,721	9-30-7 5	Bussgang	et al.					
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M	AJ	0365431	4-25-90	EP		\ .				х
	AK	0485105	5-13-02	EP					*	
ργ	AL	92/14343	8-20-92	wo					×	
l P	AM	89/08366	9-8-89	· wo	· [×	
	AN	0031193	7-1-81	-EP					*	
		от	HER DOCUMENT	(S) (Including Author,	Title, Date, Pertine	nt Pages,	Etc.}			
	AO	Shinji Matsumot Telecommunica	o et al., "200 N tions Review,	/lb/s-16-QAM-Dig January 1982, vo	tal Radio-Rela I. 24, no. 1, pa	y Syste ges 65	m Ope 73 .	rating in 4 and	5 GHz Ban	d s", Japan
	AP	M. Pecot et al., Image Commun	Compatible Cication, Octob	oding of Television of 2, 1990, no. 3,	n Images, Par pages 259-26	rt 2 Cor 8.	mpatib	le Şystem", Siç	nal Proces:	sing.
	AQ	Mitsuaki Oshima	a, "Constellatio	on-Code Division	Multiplex for D	igital HC	OTV°, I	EEE, 1992, pa	ges 1086-10	992.
EXAMINER	1	P	humphi	n	DATE CONSIDER	ED		9/11/07		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop. this form with next communication to applicant.

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FORM PTO 1449 (m		MENT OF COMMER	CE	ATTY DOCKET NO. 2003_1578	•	SERIAL NEW	NO. 10	695,	780
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		*		U.S. PATENT DOCUMENTS					
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLA	ss	SUBCLASS		DATE IF
PP	AA.	4,227,152	10-7-80	Godard et al.					
PP	AB	4,525,846	6-25-85	Bremer et al.					
PP	AC	4,751,478	6-14-88	Yoshida					
PP	AD	4,891,806	1-2-90	Farias et al.					
PP	ÀE	4,903,125	2-20-90	Parker					
PP	AF	4,937,844	6-26-90	Kao					,
PP	AG	5,164,963	11-17-92	Lawrence et al.	Y				
PP	АН	5,555,275	9-1996	Oshima					
PP	AI	5,565,926	10-15-96	Bryan et al.			\		
				OREIGN PATENT DOCUMENTS					
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	AJ	-0311188	4-12-89	EP-				*-	
	. AK	9329158	8-23-89	EP-				. X-	
	AL	-64-5135	1-10-89	-JP-		\		*	
	АМ	6 3-28145	-2-5-88	J₽				-*	
	.AN	62-133842		3 12				*	
	r	от	HER DOCUMENT(S) (Including Author, Title, Date, Pert	tinent Pages	s, Etc.)			
	AO	Tricia Hill et al., COM-31, June 1	"A Performanc 1983, no. 6, pa	e Study of NLA 64-State QAI ges 821-826	M ", IEEE	Transa	ctions on Comn	nunications,	-vol
	АР	Hideki Ishio et a	I., "A Proposal	of a Carrier Digital Transmis	sion Syst	em Usir	ng Multi-Level A	PSK", page	06 1-29 mg.
	AQ	Shanmugam, "D	igital and Anal	og Communication Systems	' 1979, p	-272 .			
EXAMINER	·	pf	ung phin	DATE CONSIDE	ERED		9/11/07		

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

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PP AA 5,1	105,442	4-14-92	V	Vei						
ff AB 4,0	048,572	9-13-77	Doglio	otti et al.						
ρρ AC 5,2	282,019	1-25-94	Basil	le et al.					=	
ρρ AD 5,3	311,547	5-10-94	V	Vei						
ρρ AE 5,2	267,021	11-30-93	Ramchar	ndran et al.	·					
ρρ AF 5,0	038,219	8-6-91	Yamasi	hita et al.		\ ·]				
₹ ₽ AG 5,0	087,975	2-11-92	Citta	et al.						
ρ ρ AH 5,0	086,340	2-4-92	Citta	et al.						
PP AI 5,2	243,629	9-7-93	M	Vei						
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AJ 53-	13765 7	12-1-78	j	//-	\·			*		
AK 02	282298	9-14-88	Ear	rope				*		
AL 03	392538	1 0-17-90	Eur	r op e				¥		
AM 94	90552	6-17-9 2	Eur	rope				*		
PP AN 05	506400	9-30-92	Eur	rope				х		
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AO Khale 1085	h	, Combined n	nultilevel codi i	ing and multires	alution n	Todulatio	on, February 8,	, 1993, Pag	 e s 108 1-	
AP P. Ho Globa	P. Hoeher et al., Performance of an RCPC-Coded OFDM-based Digital Audio Broadcasting (DAB) System, IEEE Global Telecommunications Conference "Globecom '91", December 2-5, 1991, Vol. 1 of 3, Pages 2.1.1 - 2.1.7									
AQ K. M. Pages	K. M. Uz st al., Combined multiresolution source coding and modulation for digital broadcast of HDTV*, 1992, Pages 283-292									
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

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PP	AA	5,142,353	8-25-92	Kageyar	na et al.			\		
PP	AB	5,197,061	3-23-93	Halbert-Las	ssalle et al.					
Pf	,AC	5,291,289	3-1-94	Hulyalk	ar et al.					
PP	AD	5,166,924	11-24-92	Мо	ose					
. BP	ΑE	4,940,954	7-10-90	Auber	t et al.					
PP	AF	5,128,758	7-7-92	Azadeg	an et al.					
78	AG	5,038,402	8-6-91	Rob	bins					
PP	АН	5,638,112	6-10-97	Bestle	r et al.					
				FOREIGN PATENT	DOCUMENTS	,			V	
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18	AI	0448492A1	9-25-91	Eur	оре					х
P	AJ	0485108A2	5-13-92	Eur	ope		•		×	
	AK	0525641A2	2 -3-93	Eur	ope	\			- X	
	AL	0 540231A 2	5 -5-93	Eur	оре				*	
M	АМ	0531046A2	3-10-93	Eur	оре			. \	х	
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pr	AN	K. M. Uz et al., I	Multiresolution	Source and Ch	nannel Coding	for Digit	al Broad	lcast of HDTV,	1992, Page	s 61-69.
	AO	Fading Channe	Nambi Seshadri et al., Multi-Level Block Coded Modulations with Unequal Error Protection for the Rayleigh Fading Channel, Vol. 4, No. 3, May-June 1993, Pages 325-334.							
m	AP .	William F. Schre	eiber, Spread-	Spectrum Telev	rision Broadca	sting, SM	MPTE Jo	ournal, August	1992, Pages	538-549.
EXAMINER	J	pl	phungplin DATE CONSIDERED 9/11/87							

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11	AA	5,063,445	11-5-91	Nishiz	awa et al.				
PP	AB	5,819,000	10-6-98	Os	shima	1			
18	AC	5,999,569	12-7-99	Os	shima				
PP	AD	5,892,879	4-6-99	Os	shima				
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	AE	7-99522	4-11-95	J€	opan			abstract	
	AF	7-79415	3-20-95	Je	span ·			abstract	
	AG	5-75568	3-20-9 3	- Je	apan-			abstract	
PP	АН	86-07223	12-4-86	V	NO ·			х	
M	AI	2 187 611	9-9-87	Great	t Britain			X	
	AJ	85/04544	1 0-10-85	-+	₩Ð			gr X	
	AK	-04-196822	7-16-92	Ja	i pai)	. \	\(\int_{\sigma}\) \(\int_{\sigma}\)	abstract	
	AL	2-16697 9	6-27-90	Ja	pan			abstract	
	AM	64-74836	″.¹ 3-20-89	Ja	pan			abetract	
	AN	-53-108215-	9-20-78	Ja	pan :			abstract	
	T	011	HER DOCUMENT	S) (Including Auth	or, Title, Date, Pen	tinent Pages, Etc.)			
	AO	M artin Vetterli et S ystems and Si ç	t-al., Multiresolo gnal Processing	ution Coding T g. Volume 3, N	'echniques for May 1992, Pag	Digital Televisio es 161-187	n: A Review, M	ultidimensiona	af Eg
	АР	Ezio Biglieri et a	f., Introduction	to Trellis-Code	ed Modulation	with Application	s, April 6, 1992,	Pages 173-26)
	AQ 1	English Languag	je Abstract of E	European Pate	nt No. 93 30 7				
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99	AA	4,636,876	1-13-87	Schw	/artz						*
PP	AB	4,855,692	8-8-89	Kennar	d et al.						
PP	AC	4,873,701	10-10-89	Tref	tter	$\overline{}$					
PP	AD	4,958,360	9-18-90	Sa	nri						
PP	AE	5,115,453	5-19-92	Calderba	nk et al.		/·				
. 18	AF	5,168,509	12-1-92	, Nakamu	ra et al.				\		
PP	AG	5,600,672	2-4-97	Oshima	a et al.						
PP	АН	6,049,651	4-11-00	Osh	ima						
98	Al	6,256,357	7-3-01	Osh	ima						
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	AJ	0 122805	1 0-24-84	. 6	P					· *	
	AK	6 3-180280	7 -25-88	н-	P.					abstract .	
	AL	64 68144	3 -14-89	Jap	oan	\				abstract-	
08	АМ	5-218978	8-27-93	Jap	oan		$\sqrt{}$	\			×
64	AN	3-69295	3-25-91	Jap	oan .						Х
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	AO	Kazuhiko Nitade C pnference on	azuhiko Nitadori, Synthesis of Multichannel Orthogonal VSB Signals by Quadrature Method, 1976 International principles on Communications, June 14-16, 1978, Volume 1, Pages 3-25 - 3-29								
	АР	AP Themas M. Cover, Broadcast Channels, IEEE Transactions on Information Theory, January 1972, Pages 2-14									
	AQ	"O ptimum Weig C OM-26, No. 6,	hted PCM for June 1978, P	Speech Signals	*, Sundberg, IE	EE Tra	nsaction	is on Con	nmuni	cations, Volu	ıme.,
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PP.	AA	5,170,413	12-8-92	Hess et al.					
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	AD	57-39629	3-4-82	J apan			<u> </u>	abstract	
	AE	58 -181547	9-26-83 -	Japan				abstract	
	AF	6 3-180222	7-25-88	Japan	\(\structure{\chi}\)			abstract	
PP	AG	92/22162	12-10-92	wo				х	
	АН	2-94814	4-5-90	Japan				abstract	
	Al	61-70861	4-11-88	J apan				abstrac t	
	AJ	2-218279	8 -30-90	Japan				abstrac t	
	AK	2,095,435 .	5-10-92	Canada				.,_X	
PP	AL	91/20137	12-26-91	wo	\			х	
Ø8	AM	2-141049	5-30-90	Japan					х
	AN	2 -195732-	8-2-90	Japan				abstract.	
	AO	5 -167833	7 -2-93	Japan				abstract.	
M.	AP	2-260726	10-23-90	Japan					Х
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PP	AA	3,824,548	7-16-74	Sul	livan et al.					·	
PP .	АВ	3,959,726	5-25-76	Hinc	oshita et al.						
PP	AC	4,303,939	12-1-81	Step	ohens et al.						
PP	AD	4,303,941	12-1-81	M	arti et al.						
PP	AE	4,309,726	· 1-5-82	Tar	naka et al.						-
PP	AF	4,535,352	8-85		Haskell						
PP	AG	4,564,858	1-14-86		Resch						
PP	АН	4,581,639	4-8-86		Judge						
PP	AI	4,769,819	9-6-88	Mats	sutani et al.						
PP	AJ	4,794,447	12-27-88	Т	sinberg						
PP	AK	4,800,426	1-24-89		Glenn						·
P P	AL	4,817,192	3-28-89	Phi	illips et al.						
PR	АМ	5,007,088	4-9-91	0	oi et al.						
PP	AN	5,029,003	7-91	Jonr	nalagadda						
89	АО	5,134,464	7-28-92	Ba	sile et al.				l		
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PB	АР	5-327807	12-10-93		Japan .					abstract	
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	AQ	M asafumi SAITO et	al., "Bit Error F	≀ate Chara i	cteristics of OFE)M in M i	ultipath E	Environir	ient",	.199 .1	
	AR	Ryutaro OHMOTO e	: t al., "π/4-shift		ocarrier Transmi	ssion", ´					
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PP	AA	5,181,112	1-19-93	Ci	tta et al.						
PP	АВ	5,377,051	12-27-94	La	ine et al.						
PP	AC	5,400,084	3-21-95		Scarpa ·					-	
PP	AD	5,576,902	11-19-96	La	ine et al.		\				
PP	AE	5,218,622	6-8-93	Fa	zel et al.						
PP	. AF	5,561,468	10-1-96	Bŋ	yan et al.		\ .				
PP	AG	5,598,220	1-97	Ci	tta et al.						
PP	АН	5,802,241	9-1-98	C	Oshima						
PP	AI	5,214,656	5-25-93	Chi	ung et al.			\			
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PP	AJ	7-264148	10-13-95	,	Japan				abstract		
118	AK	7-322219	12-8-95		Japan				abstract.		
MP	AL	3-48587	3-1-91	,	Japan				abstract		
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	·	OTHER	DOCUMENT(S) (I	ncluding Autho	or, Title, Date, Pertin	ent Pages	s, Etc.)				
bo	AO	J. A. C. Bingham, "N Communications Ma	Aulticarrier Mod	dulation for	Data Transmiss	sion: Ar	ı Idea Wh	ose Time Has	s Come", IEE	E	
ff	AP	B. Hirosaki, "An Orth Transactions on Con	B. Hirosaki, "An Orthogonally Multiplexed QAM System Using the Discrete, Fourier Transform", IEEE Fransactions on Communications, Vol. Com-29, No. 7, July 1981, pages 982-989								
PP	AQ	L. J. Cimini, Jr., "Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing", IEEE Transactions on Communications, Vol. Com-33, No. 7, July 1985, pages 665-675 and Annex									
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M .	AJ	2-154583	6-13-90		Japan		<u> </u>		abstract		
	AK						44	•			
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	·	OTHER	DOCUMENT(S) (II	ncluding Autho	or, Title, Date, Pertine	ent Pages,	Etc.)	<u> </u>		L	
PP	AO	Spring National Cor	NATION OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.) ki MORIYAMA et al., "Delay Propagation Characteristics at VHF and UHF bands in Urban Area", 1991 y National Convention Record, The Institute of Electronics, Information and Communication Engineers, p. 406, March 15, 1991								
pp	AP	Yasuhiro ITO et al., Terrestrial Digital Te	"Adaptive Weig elevision Broad	ghted Code casting", IT	e Division Multipl FE Technical Rej	texing (A port Vol.		1) Transmission . 13, pp 27-32,	n System for February 25	, 1993	
5	AQ				-	•					
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 1 of 1	Sheet 1 of 1 INFORMATION DISCLOSURE STATEMENT										
FORM PTO 1449 (n		TMENT OF COMMERC	E	ATTY DOC 2003_15				RIAL NO. 695,780	OIPE WAS		
PAT LIST OF	ENT AN	D TRADEMARK OFFIC	E	APPLICAN Mitsuaki					DEC 2.1 2005 W		
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	,		U.S	S. PATENT DO	OCUMENTS				TRUID		
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE		NAME	CLASS	s	SUBCLASS	FILING DATE IF APPROPRIATE		
89	AA	4,597,090	6-24-86	Fo	rney, Jr.					·	
P P	AB	4,077,021	2-28-78	Csa	ajka et al.						
PP	AC	2005/0084750	4-21-05	Wa	ang et al.						
PP	AD	2005/0058633	3-17-05	Eps	tein et al.						
89	AE	2005/0922922			_						
PP	AF	4,918,437	4-17-90	Jasi	nski et al.						
PP	AG	5,023,889	6-11-91	Divs	salar et al.						
99	АН	5,063,452	11-5-91	Hi	gurashi						
98	Al	5,124,852	6-23-92	Su	wa et al.						
98	LA	5,136,380	8-4-92		Cho						
PP	AK	5,146,335	9-8-92	Ki	m et al.		\prod	, \ \.			
PP	AL	5,148,422	9-15-92	Sa	ko et al.		\setminus		·		
PP	АМ	5,218,436	6-8-93	Sugiy	/ama et al.		-				
			FORE	IGN PATENT	DOCUMENTS						
		DOCUMENT NUMBER	DATE	C	DUNTRY	CLASS		SUBCLASS	TRANSLATION YES	NO	
PP	AN	2627574 ⁻	7-21-04		CN	<u> </u>					
₩.	AO	1529838	5-11-05		EP	Ц			abstract		
- pp	AP	1499725	5-26-04		CN				only abstract		
· pp	AQ	2004-159207	6-3-04		JP			- \ -	corresponds to AP		
i	AR	1528854	5-11-05		EP				only abstract		
pp	AS	52118	12-16-02		UA		\bigcup		only abstract		
M	АТ	1569334	1-26-05		CN					×	
		OTHER	DOCUMENT(S) (II	ncluding Autho	r, Title, Date, Pertine	nt Pages, I	Etc.)				
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

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Sheet 1 of 1		1 1	INFORMA	TION DISCLOSURE STATEMENT		-/		
	DEPART	TMENT OF COMMERC		ATTY DOCKET NO. 2003_1578	SERIAL 10/695,	78¢ FFR 0	7 2007	
PAT LIST OF	TENT AND	D TRADEMARK OFFICI NCES CITED BY APPLICAI	E ·	APPLICANT Mitsuaki OSHIMA		CROUS		
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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	S. PATENT DOCUMENTS NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
PP	AA	4,267,592	5-12-81	Craiglow				
PP	AB	4,601,045	7-15-86	Lubarsky				-
PP	AC	4,912,706	3-27-90	Eisenberg et al.				
PP	AD	4,914,655	4-3-90	Johannes et al.				
19	AE	5,018,198	5-21-91	Takahashi				
99	AF	4,003,002	1-11-77	Snijders et al.				
88	AG	4,053,713	10-11-77	Nitadori				
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
M	AJ	3-13145	1-22-91	Japan			abstract	
PP	AK	4-322592	11-12-92	Japan			abstract	
B	AL	63-253738	10-20-88	Japan			abstract	
108	АМ	62-502932	11-19-87	Japan			abstract	
m	AN	58-107740	6-27-83	Japan			abstract	
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FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: March 16, 2007				ATTY DOCKET NO. 2003_1578 SERIAL NO. 10/695,780 APPLICANT MAR 16 [W]								
										Mitsuaki OSHIMA FILING DATE October 30, 2003		
				U.S. PATENT DOCUMENTS								
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE					
PP	AA	5,210,770	5-11-93	Rice								
99	АВ	5,519,730	5-21-96	Jasper et al.								
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PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S)				APPLICANT Mitsuaki OSHIMA		TRADENAME OF			
(Use several sheets if necessary) Date Submitted to PTO: July 12, 2007				FILING DATE October 30, 2003		GROUP 2611			
			U.S	S. PATENT DOCUMENTS					
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	CLASS FILING DATE IF APPROPRIATE		
9. P ·	AA	4,882,725	11-21-89	Noda et al.					
88	AB	4,985,769	1-15-91	Yasumoto et al.					
P	AC	5,276,507	1-4-94	Uwabata et al.					
	AD								
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			FORE	IGN PATENT DOCUMENTS	,	·•·			
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLA YES	TION NO	
PP	AJ	60-24753	2-7-85	Japan			partial & abstract		
PP	AK	2-278940	11-15-90	Japan			partial & abstract		
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